GPS Locator Module

Model: CR-16

WI-RD-D-055 V1.0

UBX-G7020 Single-Chip GPS Locator Series
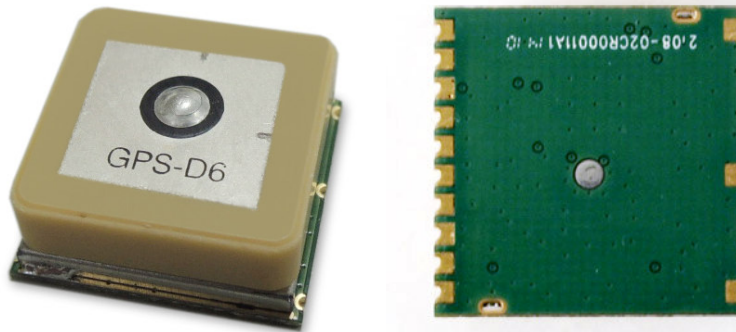
Overview:

The main goal of CR-16 is to be used as a part of integrated system, which can be a simple PVT (Position-Velocity-Time) system, for instance, G-mouse, PND (Personal Navigation Device), or complex wireless systems, such as a system with GSM function, a system with Bluetooth function, and a system with GPRS function. The module (CR-16) can be the best candidate for users' systems as the users' systems need the careful consideration on the performance, sensitivity, power consumption, and/or size of the module.

Features:

- Active antenna on board helps the system integrators to do the design-in easily.
- High sensitive GPS Locator and GPS antenna.
- The perfect match is most suitable for any mobile devices, such as PND, Tablet, personal tracker and any portable devices, which need GPS features..
- Intelligent, user configurable power management and a built-in DC/DC converter for significantly lower power consumption.
- Improved jamming immunity

Applications

- Personal positioning and navigation
- Tracking device and Tablet PC, Automotive/Marine navigation
- GPS receiver and GPS mouse, Timing application

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San Jose Technology, Inc. | 11F., No.2, Sec. 4, Jhongyang Rd., Tucheng Dist., New Taipei City 236, Taiwan (R.O.C.) | Tel: 886-2-22694456 | Fax: 886-2-22694451 | sanav@sanav.com

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Specification:

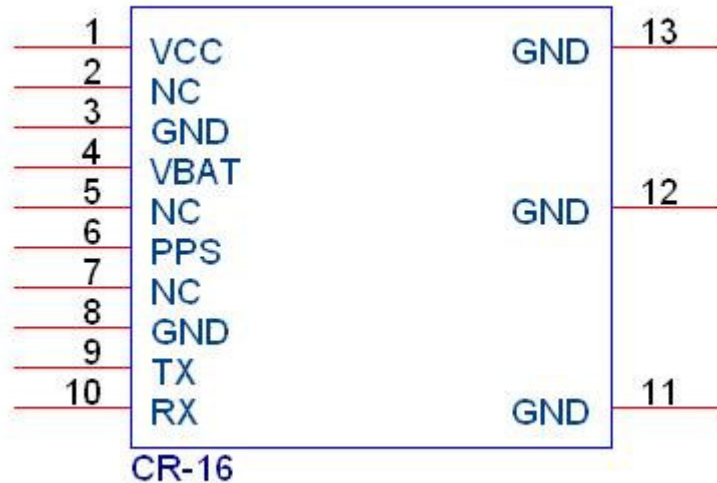| PHYSICAL CONSTRUCTION	
GPS Board Dimension	L16mm*W16mm*H6.5mm
GPS Antenna Dimension	L15mm*W15mm*H4.0mm
Weight	6 gram
Receiving frequency	1575.42MHZ ; C/A code
Mounting	SMD
Construction	Full EMI shielding
ENVIRONMENTAL CONDITIONS	
Temperature	Operating: -40 ~ +80 ℃
	Storage: -40 ~ +85 ℃
COMMUNICATION	
Protocol	NMEA, UBX binary
Signal level	UART
INTERFACE CAPABILITY	
Standard Output Sentences	GGA, RMC, GSV, GSA, VTG, GLL Optional: ZDA
PERFORMANCE	
Built-in Antenna	Highly-reliable ceramic patch
Sensitivity	-161dBm (Tracking)
Start-up time	1 sec. typical (hot start)
	28 sec. typical (warm start)
	30 sec. typical (cold start)
Position accuracy	2.5 m[1]
Receiver architecture	56-channel u-blox 7 engine GPS L1C/A SBAS L1C/A QZSS L1C/A Galileo E1B/C[2]
Accuracy of time pulse signal	RMS 30ns 99% 60ns
Velocity	500 m/s
Altitude	50,000m (Maximum)
Update Rate	1Hz(Default) max up to 10Hz
Power Supply	3V~5V
Power Consumption	40mA
Baud Rate	9600 bps (default) Optional:4800/19200/38400/115200 bps are adjustable

[1] CEP, 50%, 24 hours static, -130 dBm, > 6 SVs

[2] Ready to support GALILEO E1B/C when available

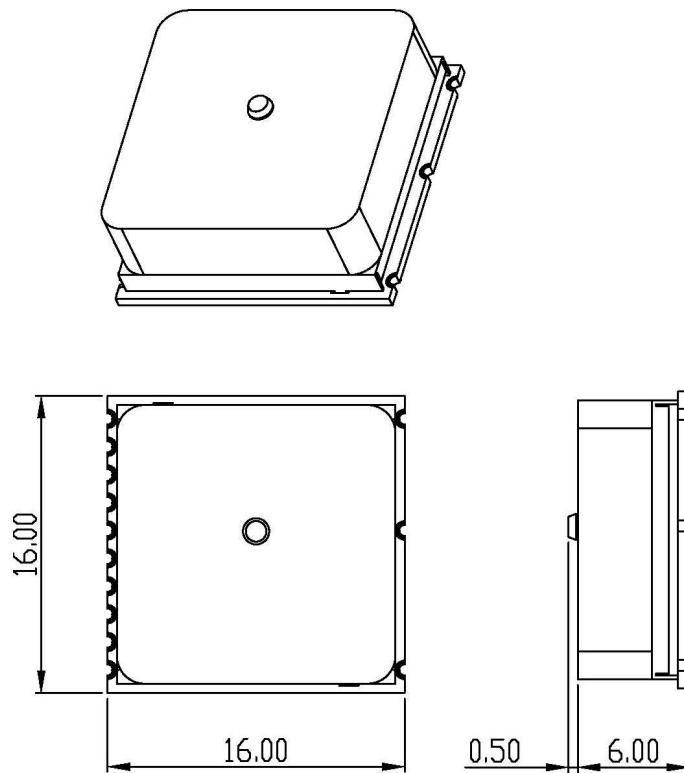**Note:** GLONASS feature is optional

Pin Assignment:

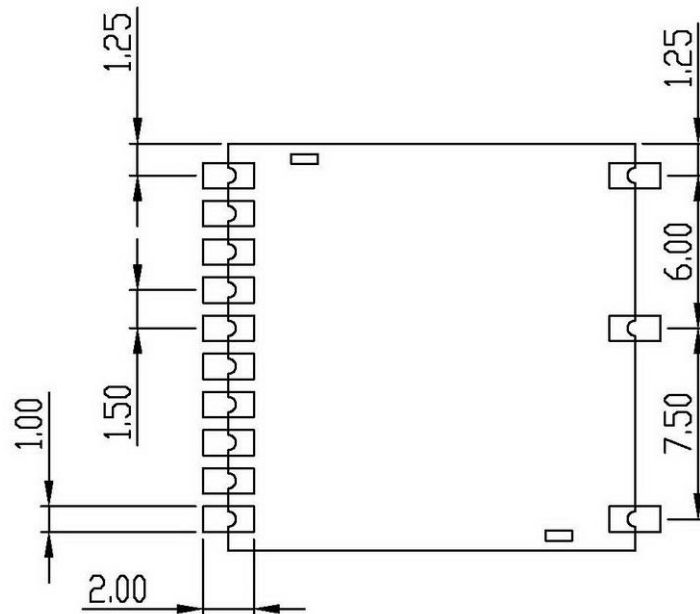Figure 2.1 shows the pin definitions of CR-16. Table 2.1 describes the corresponding definitions for pins.

Figure 2.1 CR-16 Pin definitions

Pin	Name	Type	Description
1	VCC	P	Main power input (3.0 ~ 5VDC)
2	NC		
3	GND	P	Ground
4	VBAT	P	Backup Battery Input (1.8 ~ 3.6VDC) It must be connected. Power consumption under below 25uA when the power is off and in standby mode.
5	NC		
6	1PPS	O	TIME PULSE output CMOS Output Logic High, VOH 0.8 x VDD(min) VDD(max) CMOS Output Logic Low, VOL GND(min) 0.2 x VDD(max)
7	NC		
8	GND	P	Ground
9	TX	O	CMOS level asynchronous output for UART CMOS Output Logic High, VOH 0.8 x VDD(min) VDD(max) CMOS Output Logic Low, VOL GND(min) 0.2 x VDD(max)
10	RX	I	CMOS level asynchronous input for UART Input Logic High, VIH 0.7 x VDD(min) Input Logic Low, VIL 0.3 x VDD(max)
11	GND	P	Ground
12	GND	P	Ground
13	GND	P	Ground

Assemble Tolerance: 0.2 mm